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**Han et al.**

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(54) **PERIODIC CHANNEL STATE INFORMATION REPORTING FOR TIME DIVISION DUPLEX (TDD) CARRIER AGGREGATION SYSTEMS**

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**H04W 24/10** (2009.01)  
**H04W 48/14** (2009.01)  
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(52) **U.S. Cl.**  
CPC ..... **H04W 24/10** (2013.01); **H04W 48/14** (2013.01); **H04W 52/0209** (2013.01); **H04W 52/0212** (2013.01); **H04W 36/08** (2013.01);  
(Continued)

(58) **Field of Classification Search**  
None  
See application file for complete search history.

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*Primary Examiner* — Ayaz Sheikh

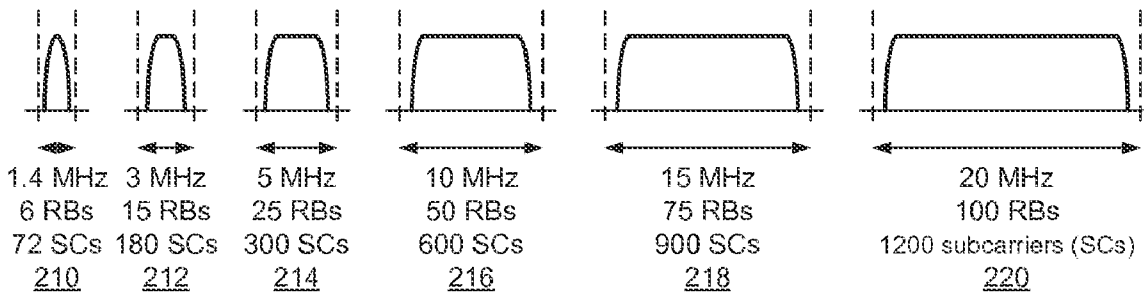
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(57) **ABSTRACT**

Technology for periodic channel state information (CSI) reporting is disclosed. One method can include a user equipment (UE) identifying a configured CSI reporting instance for a secondary cell to report the periodic CSI to a node based on a CSI reporting configuration of the secondary cell. The UE can determine that the configured CSI reporting instance of the secondary cell used to report the periodic CSI does not correspond with an uplink (UL) subframe of a primary cell. The UE can transmit the periodic CSI report for the secondary cell, to the node, using a physical uplink shared channel (PUSCH) on the secondary cell when the periodic CSI reporting instance for the secondary cell does not correspond with the UL subframe of the primary cell and an UL-SCH (Uplink Shared Channel) is available in a subframe that corresponds to the periodic CSI reporting instance of the secondary cell.

**7 Claims, 12 Drawing Sheets**



(51)	<b>Int. Cl.</b> <i>H04W 52/02</i> (2009.01) <i>H04W 36/08</i> (2009.01) <i>H04W 48/18</i> (2009.01)	2012/0257524 A1* 10/2012 2012/0281601 A1* 11/2012 2013/0021980 A1* 1/2013 2013/0028205 A1 1/2013 2013/0039231 A1* 2/2013 2013/0064211 A1 3/2013 2013/0114455 A1* 5/2013 2013/0114554 A1 5/2013 2013/0148613 A1* 6/2013 2013/0188591 A1* 7/2013 2013/0286904 A1 10/2013 2014/0016714 A1 1/2014 2014/0169300 A1 6/2014 2014/0247798 A1* 9/2014 2014/0286296 A1* 9/2014	Chen et al. .... 370/252 Kuo et al. .... 370/280 Yang et al. .... 370/328 Dajnjanovic et al. Wang ..... 370/280 Tanaka Yoo et al. .... 370/252 Yang et al. Han et al. .... 370/329 Ko et al. .... 370/329 Xu et al. Chen et al. Kim et al. Lunttila et al. .... 370/329 Tirola et al. .... 370/329
(52)	<b>U.S. Cl.</b> CPC ..... <i>H04W 48/18</i> (2013.01); <i>H04W 52/0261</i> (2013.01); <i>Y02B 60/50</i> (2013.01)		
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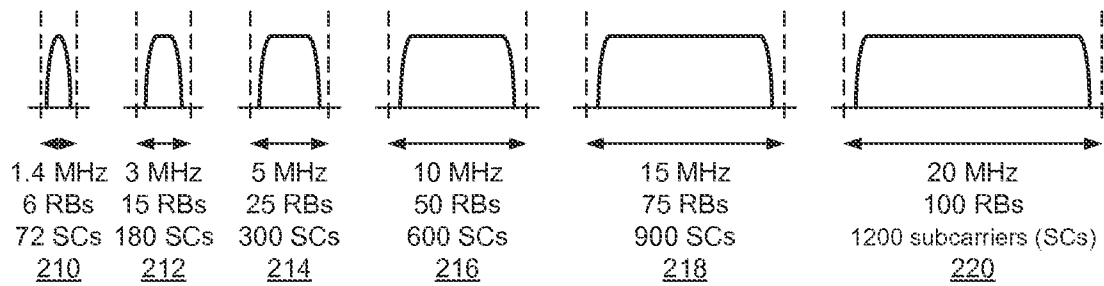


FIG. 1

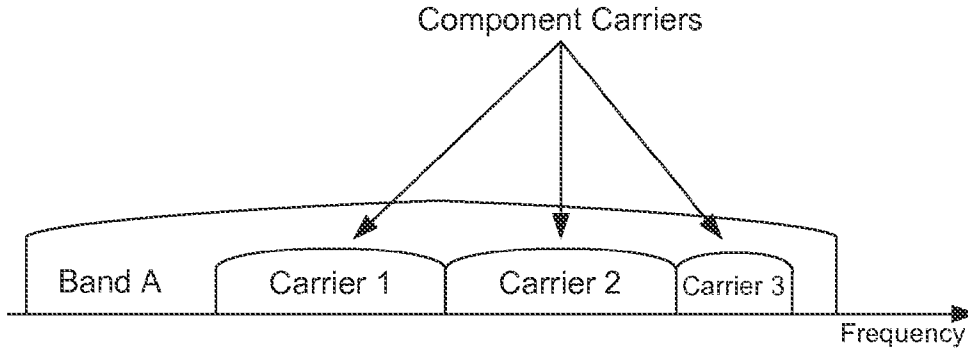


FIG. 2A

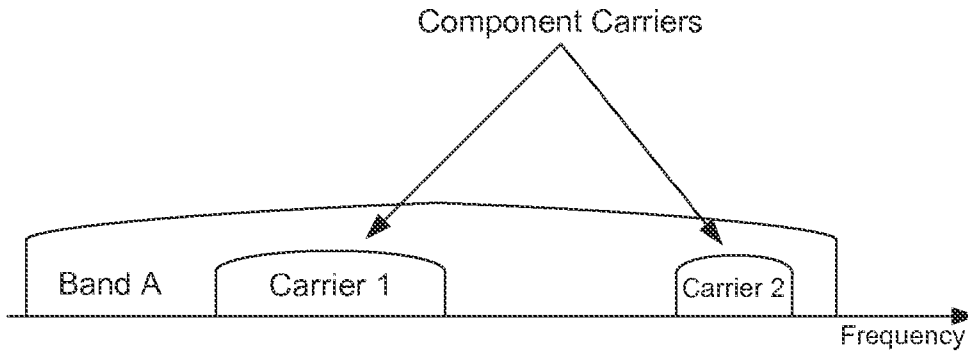


FIG. 2B

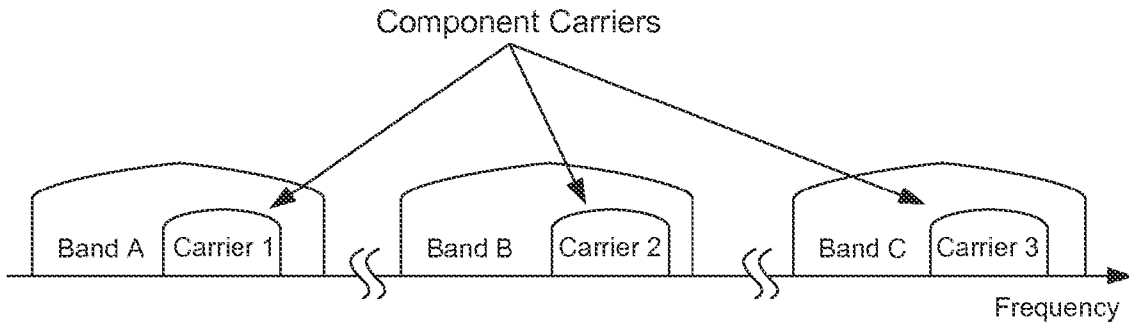


FIG. 2C

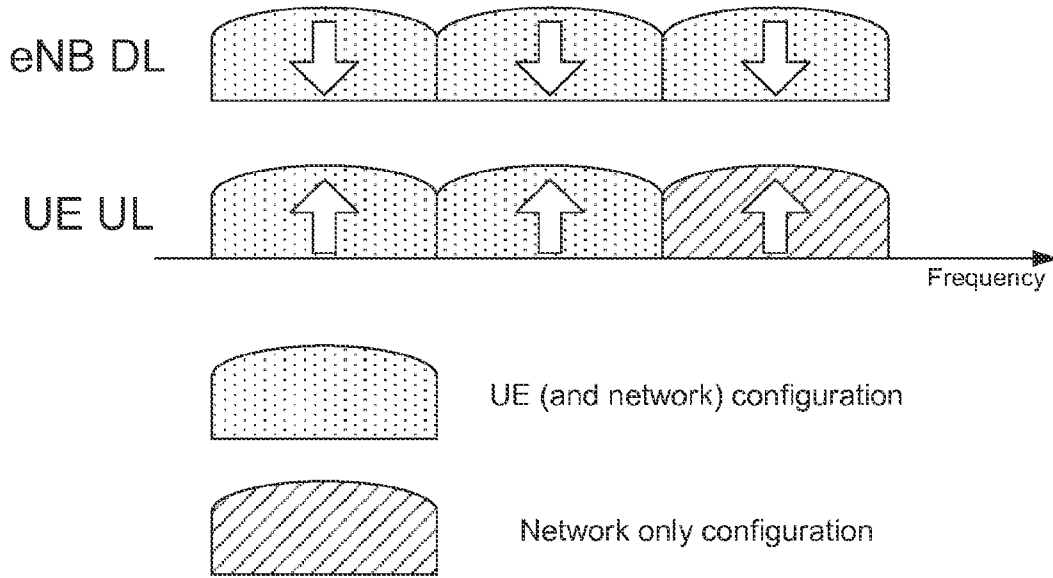


FIG. 3A

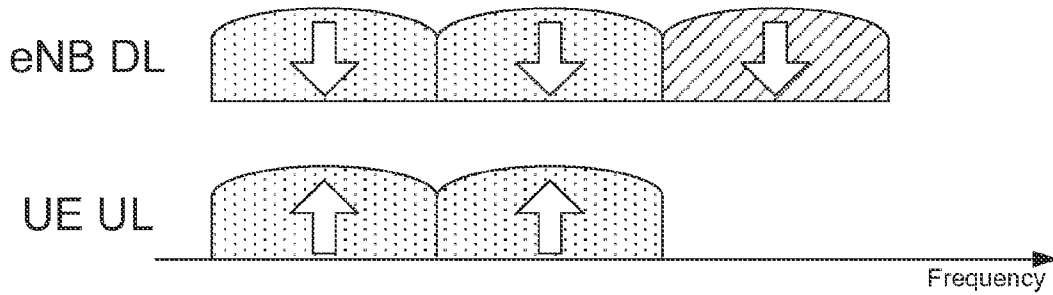


FIG. 3B

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